

## **REMARKS**

Claims 1-21 are pending in this application. Applicant has amended claim 1 and claim 12, and respectfully traverses the rejection of claims 1-21, as amended. Applicant respectfully requests reconsideration.

### **Claims 1-21 are not obvious over DeJager ('627), in view of Wood et al. ('470), Jones et al. ('041), and Hoge et al. ('182)**

The Examiner has rejected Claims 1-21 under 35 U.S.C. § 103 for obviousness over DeJager, Wood et al., Jones et al., and Hoge et al. The Examiner, however, has not established a *prima facie* case of obviousness. Therefore, Applicant respectfully disagrees with Examiner's rejections.

To establish a *prima facie* case of obviousness, four basic criteria must be met. First, a prior art reference must be within the same field of endeavor or directly pertinent to the invention. Second, from the prior analogous art, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the reference or teachings. Third, there must be a reasonable expectation of success in modifying or combining references. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching, motivation, or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Applicant's

disclosure. *See King Instrument Corp. v. Otari Corp.*, 767 F.2d 853 (Fed. Cir. 1985). *See In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

**1. There is no suggestion or motivation to combine the reference teachings**

Applicant respectfully submits that there is no suggestion or motivation, in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine DeJager with Wood et al. or make a change or extension of DeJager in view of Wood et al. This is especially so because the Examiner has the distinct burden of proving motivation to combine references.

Applicant respectfully asserts that combining DeJager and Wood et al. conflicts with the present invention and actually *teaches away* from the present invention. DeJager specifically teaches providing unidirectional fibers with a binder having spacer particles therein and heating the fibers to pyrolyze the binder. However, when mentioning heating the binder, DeJager gives no reference to flowing hot gas into a mold cavity where the fibers are located. Therefore, a skilled artisan would neither have sought out DeJager for the purpose of flowing hot gas into a mold cavity, nor for the purpose of injecting resin into the mold cavity, because DeJager simply is not directed to such procedures or method steps.

Furthermore, Wood et al. specifically teaches resin transfer molding. Even when mentioning such resin transfer molding, Wood et al. gives no reference to unidirectional fibers with a binder. Moreover, Wood et al. doesn't even mention heating the fibers to pyrolyze the binder, which is an essential requirement of claims 1 and 12. Therefore, a person of ordinary skill in the art would not have sought out Wood et al. for the purpose of utilizing unidirectional fibers with a binder, nor would a skilled artisan have sought out Wood et al. for the purpose of

flowing a hot gas to heat the fibers to pyrolyze the binder, because those limitations are simply not what Wood et al. is directed to.

## **2. The references do not teach or suggest all claim limitations**

Applicant respectfully asserts that the Examiner has not met the requirement that all claim limitations be taught or suggested in the analogous art. With respect to claims 1 and 12 (and all claims depending therefrom), nothing in the prior art suggests "leaving no material in the mold other than the fibers" pursuant to pyrolyzing the binder, as required in claims 1 and 12.

The Examiner cited DeJager as the most relevant reference to this claim limitation, but DeJager simply characterizes "removal of the binder" without removing, melting, or pyrolyzing the other materials in the mold other than the fibers. (see DeJager, column 11, line 6) Specifically, DeJager discloses that the particulates play an important role after removing the binder, in that "[t]he function of the spacer particles is to separate the fibers or filaments uniformly over a certain distance and maintain the general longitudinal orientation of the fibers or filaments," and "the matrix particles present between the monofilaments keep the filaments spaced" during removal of the binder. (see DeJager, column 5, lines 40-44; see also DeJager, column 6, lines 28-29) More particularly, DeJager discloses "applying a powdery treating agent comprising spacer particles and particles of a flexible low melting binder on the spread filaments and subsequently melting the binder to fix the spaced filaments and spacer particles," and that the "particles penetrate uniformly between the filaments" (see DeJager, column 4, lines 33-37; see also DeJager, column 4, lines 50-51) In DeJager, during melting or removal of the binder, "cavities/void spaces develop in between of the entrenched Al-Mg matrix powders/SiC

particulates, being hold in place in between of the mono-filaments," (see DeJager, column 11, lines 6-9)

In distinct contrast, the claims 1 and 12 importantly require that by "flowling a gas into the mold cavity," the mold cavity is heated to "pyrolyze the binder and *leave no material in the mold other than the fibers.*" Although DeJager discloses pyrolyzing the binder, DeJager does not disclose leaving no material in the mold other than the fibers. This distinction clearly demonstrates that not even DeJager describes the limitation of "leaving no material in the mold other than the fibers" as claimed in the present invention. Therefore, none of the analogous art references teaches or suggests this limitation as claimed in claims 1 and 12.

Finally, Applicant respectfully asserts that perhaps the most compelling evidence that the rejection of the claims is improper is the specific invocation of the word "then" after each claim limitation. The MPEP mandates that use of the word "then" after each claim limitation in a method or process claim requires such limitations of the claim to be performed in the exact order in which they are written. Applicant has invoked the term "then" specifically for this purpose, and thus claim 1 is required to be performed as dictated by placement of the "then" limitation in the claim. The requirement that the limitations of claim 1 be performed in the exact order after the term "then" necessitates that it is improper to combine DeJager with Wood et al. because neither DeJager nor Wood et al. explicitly or implicitly suggest combining the references in the *exact order* in which claim 1 requires.

In commenting upon the references and in order to facilitate a better understanding of the differences that are expressed in the claims, certain details of distinction between the references and the present invention have been mentioned, even though such differences do not appear in all of the claims. It is not intended by mentioning any such unclaimed distinctions to create any implied limitations in the claims. Not all of the distinctions between the prior art and Applicant's present invention have been made by Applicant. For the foregoing reasons, Applicant reserves the right to submit additional evidence showing the distinctions between Applicant's invention to be unobvious in view of the prior art.

The foregoing remarks are intended to assist the Examiner in re-examining the application and in the course of explanation may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the actual claim language should be considered in each case. Furthermore, the remarks are not to be considered to be exhaustive of the facets of the invention, which render it patentable, being only examples of certain advantageous features and differences that Applicant's attorney chooses to mention at this time.

### CONCLUSION

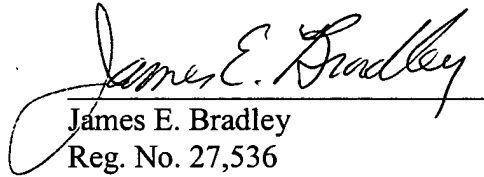
In view of the amendments and remarks set forth herein, Applicant respectfully requests that a Notice of Allowance be issued in due course.

The Commissioner is hereby authorized to charge all fees and any additional fees that may be required or credit any overpayment to Bracewell & Patterson, L.L.P. Deposit Account No. 50-0259 (0408RF.045524).

Respectfully submitted,

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